

The Institution of Engineers, Australia: Sydney Division
Engineering Heritage Committee
ORAL HISTORY PROGRAM

INTERVIEWEE: Ken Hickson

TAPE NUMBERS: IEA SYD: FH49, FH50 & FH51

INTERVIEWER: Frank HEIMANS

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NUMBER OF TAPES: 3

RESTRICTIONS ON USE: NIL.

LOG PREPARATION: This log was prepared using a SONY TCM-5000 Tape recorder

INTERVIEW TAPE LOG

Tape: IEA SYD: FH49, Side A.

TIME (mins/secs)	SUBJECT	NAMES & KEYWORDS
001	Start of Tape	
009	Gives name, date & place of birth: (Kenneth Mitchell Hickson, born at Croydon Park, 1927)	Croydon Park
022	Describes the occupation of his parents and the effect that the Great Depression had on the family's financial circumstances. Walked from Croydon Park to Fivedock instead of taking the bus to save a penny.	Great Depression
051	Remembers the street vendors of the time and confirms that street life was more interesting then because of contact with neighbours and street vendors.	Rabbit-Oh Man Milkman Baker
082	Was the only child in his family. His father always called his mother 'Mate'.	

101	Confirms that he was always interested in technical pursuits - carpentry and building Crystal radio sets.	Crystal sets
115	Built valve radios as a teenager when they became available.	Valve radio sets
130	Recalls the subjects he took at High School and the names of some of the teachers. French was a compulsory subject as German was banned because the war was on. Excelled in Physics and Chemistry.	Homebush Boys High School Mr Roberts, Headmaster Count de Fouesnel; French teacher
154	Left school at Intermediate Certificate at 15 years of age, having decided to make electrical engineering his future profession. Joined the NSW Railways in 1943 as an Apprentice Signal Electrician.	Ralph M. Lee, electrical contractors, Sussex St. Sydney.
183	Names the station where he started working for the NSW Railways and mentions some of the people he worked with. Gives an account of other stations he was sent to work on construction and maintenance. Finished his apprenticeship in 4 years, as the 5-year apprenticeship course was shortened during the war years.	Hawkesbury River Station (now Brooklyn) Jack McCarthy Hornsby
203	Went back to night school and completed a 2-year preparatory course in Electrical Engineering Completed the Diploma in Electrical Engineering in 1948 at Sydney Technical College.	Preparatory Diploma Course Fort Street Boys High School, Petersham Sydney Technical College, Ultimo

214	Describes the people in charge of the Signals Branch. Passed an examination to become Assistant Engineer in the Design Office.	Mr. W. F. Barton, Signals and Telegraph Engineer, Signals Branch. John Fahey, Signals and Communications Engineer Railway Institute.
255	Describes how he met his wife.	Marriage, 1951
281	Gives details of a typical day as a Signal Apprentice.	Rotary contacts in signalling boxes
317	Recalls a major accident in 1943 between an express train and a school bus when between 18 -20 schoolchildren were killed.	Hawkesbury River railway station.
364	Recalls other rail accidents at Sydenham and Berala about 1952.	Sydenham Berala
371	Confirms that most rail accidents were due to human error.	
402	Describes the state of the signalling system in the 1950s as starting to show strains.	
422	End of Tape IEA SYD:FH49 Side A.	

Tape: IEA SYD: FH49, Side B.

005	Spent time in the Design Office of the Signal Communications Branch. Did not want to end up in the Drawing Office.	Mr W Barton
026	Does not think that Mr W. Barton had any bias towards employees who did not have academic qualifications.	
034	Automatically became an Electrical Mechanic on completing the apprenticeship. However, this did not make him qualified to do maintenance on the signalling system - a further examination was required to be passed. Did not become a Signal Electrician because he was completing the Diploma course at night school.	Electrical Mechanic
063	Completed the Electrical Engineering Diploma in 1952 which made him eligible to join the Institution of Engineers Australia.	Electrical Engineering Diploma
095	Mentions that there were two design offices at the State Railways- a Communications Design Office and a Signalling Design Office. Progressing in rank through the design office was a traditional way of promotion.	
116	Took on the job of lecturing and training apprentices the technical side of signalling for four or five years. Gives some details of topics taught in the one-year course held at nights.	Fault-finding AC Track circuits DC track circuits
155	When he stopped teaching, a separate school was set up in Erskineville by Eric Archer. Engineers from the Design Office would teach subjects. Students were also taken out to country stations, as the course was changed to a day course. Wrote material for the course and maintained a position as occasional teacher. Enjoyed teaching part time.	Eric Archer, Signal Engineer

177	Says that the course was not aimed at a Professional Engineer's level - it was more practical in nature. Confirms that there is still no formal tertiary training available in signal engineering theory. Thinks that the demand is still not there for teaching this subject at university level and that it would be too restrictive a course, as it would only teach signalling theory, with not enough jobs available to graduates	
212	Gives details of how a new signalling scheme was conceived, planned and costed. The Chief Commissioner or the Board would then rule on the viability of the plan. Mentions that in the early 1950s, funding was very scarce and the signalling system's maintenance dropped off in frequency and quality with many staff not being replaced as their jobs were made redundant or when they retired, with the result that the system deteriorated.	Funding for the rail system reduced. Rail system suffers and deteriorates in 1950s.
263	The deterioration of the rail system worried him when he became Assistant Signal and Communications Engineer. Remembers looking at some of the wiring at Ashfield Station in 1972, which was then in a particularly bad state. Says that pressure was then applied to begin the renewal of the rail system and the first large contract to be let was at Sydney Yard Signalling, then at Strathfield and eventually the rest of the rail system.	Ashfield Station Sydney Central Station.

295	<p>Mentions that the Federal Government took an interest in funding the State rail systems. Mentions that although the Federal Government wanted a return on expenditure for the amount invested, this was never going to happen and eventually, in 1973, when the Federal Government realised this, they did not insist any longer on this requirement. From that time on, funds were made more freely available to begin the renewal program of the State rail system. Adds that the contracts let to renew the rail system were let out to private industry as the railways did not have the staff to carry out such a large task.</p>	
324	<p>Recalls that this was the first time such large contracts were let out to private enterprise and that the Railways did not have the expertise to write the large contract specifications and lacked experience in this task. Says that Westinghouse was awarded the contract to renew the Sydney Yards and that the experience was a learning curve for both Westinghouse and the Railways.</p>	Westinghouse
344	<p>Worked on the design of automatic systems of signalling, the design power supply and the design of track circuit arrangements.</p>	

358	Describes the various positions he held in the NSW Government Railways. Describes the duties of each position, such as inspections of signalling installations in country areas.	Technical Assistant Assistant Communications Engineer General Manager, Signal & Communications Harold Bourne, Signals and Communications Engineer Eric Archer
416	End of Tape IEA SYD:FH49 Side B	

Tape: IEA SYD: FH50, Side A.

002	Start of Tape	
005	<p>Talks about the American-designed booms and motor systems for railway level crossings. Recalls that a program was instigated to install 20 -30 new level crossings systems per year-most had just flashing lights, but some had boom barriers. Mentions that one of the failures of the American-designed system was that if a failure in the flashing lights on the level crossing occurred, if, for instance the battery had run flat, it would not be known to the train driver. With the lights not operating, the chances of a collision at the crossing was greatly increased. Thinks that if a green light had been installed from the same battery, and if that was also not operating, that would have indicated to the driver that the battery was flat. As it would have meant altering the Australian Standard, this plan was never implemented.</p>	<p>MacKenzie and Holland</p> <p>Chullora workshops.</p> <p>Automatic battery chargers for level crossings.</p> <p>Remote control devices for signal boxes.</p>
039	<p>Mentions that the batteries were the main system, with council power only to charge batteries. As power was frequently shut off in country areas, the batteries became the main system to rely on. Talks about the bells that used to ring at level crossings, but that in suburban areas, bells would be turned off late at night because of residents' complaints.</p>	<p>Batteries</p> <p>Bells</p>

054	Thinks that in general, the level crossings were very safe because in all his time at the Railways, there was never an accident that occurred due to the failure of equipment. Mentions that recording equipment was installed at level crossings to monitor any problems. As the equipment at level crossings was automatic, with warnings triggered by the approach and departure of trains, there was no possibility for human error in the operation of the signalling equipment, except in the periodic maintenance of the system.	
081	Talks about some of the accidents that occurred at level crossings, some involving the XPT train, due to negligence or recklessness by drivers of motor vehicles.	XPT train Accidents involving trains and vehicles.
113	Confirms that part of his job was investigating accidents where signalling might have been the cause. He would do this by examining the signalling installation. An enquiry would be held and a representative of A.F.U.L.E. would be present at the enquiry.	Bernie Willingdale, representative of A.F.U.L.E. (Australian Federated Union of Locomotive Enginemen)
145	Mentions injuries to train drivers and guards who were killed in some fatal collisions. Believes that alcohol was a factor in some collisions, especially during the 1950s. Mentions a fatal train collision at Sydenham where a blood sample was taken from a driver which proved the presence of alcohol, but that the evidence could not be substantiated in court.	Alcohol as a factor in train crashes. Sydenham train accident, 1950s.
190	Gives details of the causes of the train accident at Sydenham station which was caused by signal failure.	
223	Explains that after accidents had occurred, the equipment was not usually modified, as that was too big a task.	

241	Talks about his involvement in the design of the power supplies and track circuits for railway signalling during the electrification program of the Lithgow line in the 1950s and in field installation.	Electrification of Lithgow Line Parramatta Bowenfels
268	Contributed to the signalling design of the electrification of the Gosford line.	Gosford line
287	Talks about some of the challenges posed by the electrification of these lines, such as problems caused by the introduction of larger electric locomotives.	Introduction of Electric locomotives
306	Mentions some of the innovations in signalling technology introduced during the 1950s. Thinks that the major developments in electronic signalling of the western lines occurred after electrification had been completed.	'Neoprene' & plastic cables replaced single wiring underground cables
338	Explains the intricacies of the signalling system and details how it actually works.	Electric motors points switches signals box
412	End of Tape IEA SYD:FH50 Side A	

Tape: IEA SYD: FH50, Side B.

001	Start of tape	
007	Recalls some remedial works after natural disasters occurred, such as the Maitland Floods and bushfires in the Blue Mountains.	Maitland floods of 1955 Valley Heights bushfires Snow damage to Western line
031	Discusses the use of Event Recorders. Can't comment on the present-day use of these instruments.	Event recorders
045	Has not kept up with technological developments in railway signalling since his retirement in 1986.	Retirement Computer installation in signalling equipment
059	Explains how the BRB 'miniature' signalling relays work. Thinks that their introduction was beneficial to the system and they soon became standard equipment.	BRB 'miniature' signalling relays
080	Talks about the introduction of electronic track circuits and 'fail safe' signalling equipment, used for the first time in Australia (between Liverpool and Campbelltown) in 1968.	Push-button route set controls John Rees, designer of signalling systems Harmonic currents
118	Explains the differences in operation between the impulse and jointless types of electronic track circuits.	Impedance Bond Impulse type of track circuits Jointless type track circuits

158	Talks about the ways in which the Department set about teaching its staff and technicians the new electronic track circuit technology.	
197	Mentions the introduction of the Westinghouse System (the first electronic remote control and indication system). Recalls that a lot of failures to the equipment, due to lightning discharges, occurred. Some work was done to try to improve the sensitive electronic equipment against lightning strikes. Talks about the effect of lightning strikes and bushfires on electronic circuits.	Hunter Valley Lightning discharges
249	Recalls the changes in the restructuring and the organisational changes in NSW Railways which occurred from 1972 with the advent of the new Commissioner, Phillip Shirley. Says that under the previous Commissioner, Neil McCusker, nothing had changed for years and that the system was not open to change and innovation. Found the organisation under McCusker 'deplorable'.	Philip Shirley, Chief Commissioner of Railways Neil McCusker, Chief Commissioner of Railways
290	Regrets that it was very difficult to make changes in the NSW Railway system - no one could authorise change and approval had to come from the top, which became more and more difficult. This led to dishonest practices becoming more prevalent and money and materials being diverted from capital works jobs to maintenance jobs.	Dishonest practices Diversion of funds to maintenance jobs.
345	Describes the state of the signalling system at Ashfield in the 1970s where virtually nothing had been done for over 40 years. The design of the equipment, dating back to the 1920s was hopelessly inadequate for the times.	Ashfield Railway Station.
406	Was surprised that more accidents had not occurred at Ashfield, and in the railway system generally, due to maintenance having been cut and the general state of the signalling system.	"Wrong side failure"
416	End of Tape IE SYD: FH50 Side B	

Tape: IEA SYD: FH51, Side A.

002	Start of Tape	
005	Gives the reasons for contracting out more work to the private sector from 1972 onwards.	Philip Shirley
051	Describes the design, installation and maintenance of the signalling system on the Sydney Eastern Suburbs Railway. Although new relays and cabling were installed, the system was still very much like that used in the city underground loop.	Eastern Suburbs Railway Remote indication systems
080	Became Assistant Director of Engineering of NSW Railways in 1975. Recalls that the position did not really hold a lot of authority within the organisation.	Bill Wait, Director of Engineering.
118	Talks about the various roles of the Signal and Traffic branches of NSW Railways and their knowledge and interaction. Thinks that as a general rule, the two branches worked fairly well together, although there were occasional clashes of personality.	Signal Branch Traffic Branch
186	Discusses his relationship with David Hill and the friction that developed between them towards the end of his time at NSW Railways. Reveals that David Hill was not satisfied with his performance in Maintenance. Had a conflict with David Hill. Thinks that Hill was vindictive in his dealings with staff. Also discusses the power that the unions had over changes within the organisation. <i>(NB: Some of this material could be defamatory of David Hill)</i>	David Hill, former CEO, NSW Railways
259	Says that when he became Director of Capital Works, he was not able to exert any authority within the organisation.	Alan Rhyer

304	Initiated, as Director of Capital Works, an in-depth report on the coal haulage system and brought out consultants from England. This resulted in the purchase of new locomotives and was timely, as it saved the coal industry which had large export orders for the supply of coal and was unable to meet future transportation demands.	Report on coal haulage industry
389	End of Tape IEA SYD: FH51 Side A	

Tape: IEA SYD: FH51, Side B.

003	Continuation of interview with Ken Hickson	
008	Gives his reasons for early retirement before the age of 60. Enjoyed his retirement and describes his activities since then, which includes voluntary work, manufacturing special items for disabled persons.	Technical Aid for the Disabled.
085	Talks about his three children, grandchildren and their activities.	Tony Boland John Brew, CEO, NSW Railways
106	Is satisfied about his career with NSW Railways. Singles out the introduction of jointless track circuits as one of his major achievement and one that gave him much satisfaction. Also mentions the Report on Locomotives as haven given him much satisfaction.	
129	Thinks that his biggest disappointment was his falling out with David Hill.	
145	End of interview with Ken Hickson and end of Tape IEA SYD: FH51 Side B	